THE VETERINARY RECORD

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 27. JULY 6, 1946 VOL. 58.

Hypersensitiveness in Animals

Anaphylaxis, Atopy, Allergy*

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It is not the purpose of this paper to make any new contribution to our knowledge on this subject, but so far as time permits to review the fundamental principles underlying the various phenomena characterized by hypersensitiveness, and to consider how far these various phenomena occur in the domesticated animal.

Hypersensitivity or hypersensitiveness is an unusual state of susceptibility on the part of an individual to a substance which usually excites little or no reaction in other members of the same species. Such substances include bacteria, bacterial products, some parasites and other non-toxic agents, usually, though not exclusively, of a protein nature.

The reaction with which we are most familiar is that in which the individual slowly acquires an immunity or resistance to the particular agent concerned and that reaction forms the basis of all forms of active immunization. There are occasions, however, in which the converse condition occurs; that is, an individual instead of acquiring a degree of resistance becomes abnormally sensitive to a substance. In other forms the state of hypersensitivity is natural or inherited.

This hypersensitiveness is sometimes revealed by immediate alarming symptoms which may end fatally, but in other cases the reaction is more delayed and although embarrassing to the patient is not so serious. In order to distinguish these various forms, numerous terms, of which anaphylaxis, atopy and allergy are the chief, have come into use. Unfortunately some of the terms have been used very loosely both within and without medical circles and this has led to no little confusion in the literature.

For convenience the subject will be considered under three main headings: anaphylaxis, atopy and allergy, and it is proposed, first of all, to give you a working definition of these terms in the sense that they will be used here.

1. *Anaphylaxis* (= against protection) is that form of hypersensitiveness which occurs chiefly under experimental conditions in animals, and occasionally in the course of serum therapy. It is always a sequel to the injection of some foreign substance, usually protein in nature.

2. *Atopy*, natural hypersensitiveness, or idiosyncrasy includes the various human conditions of asthma, hay fever, urticaria, etc., and possibly analogous conditions in animals. It is claimed that in most cases this form has a genetic basis.

3. *Allergy*, the hypersensitivity which occurs in bacterial infections and in some parasitic diseases.

Before proceeding to expand on each of these manifestations it should be emphasized that although there are well marked differences, no absolute or clear-cut distinction can be made between them. They are all closely linked up with immunity and the fundamental basis in all cases, though this has not been demonstrated in all, is probably an antigen-antibody union. Such differences as occur between hypersensitiveness and immunity appear to be quantitative rather than qualitative in character. It is true that the extremely alarming symptoms and sometimes fatal results associated with anaphylaxis do not suggest any relationship to immunity or resistance, but that can be explained on the basis that it is an experimental phenomenon and does not occur spontaneously.

Anaphylaxis is that form of hypersensitivity which develops in some animals following the *injection* of some protein which is in itself non-toxic. Instead of the animal becoming increasingly resistant, as is the custom in the course of immunization, the animal becomes highly sensitive and if a second injection of the same substance is given intravenously or intraperitoneally after a delay of about ten days, the animal immediately displays symptoms of collapse known as anaphylactic shock. Until the "shocking" dose is administered one is unaware that the animal is in a hypersensitive state. The nature of the symptoms varies from animal to animal but is constant in the same species irrespective of the nature of the sensitizing substance (anaphylactogen). On the other hand, the same agent will produce different symptoms in different species of animals. Even though an animal is in a hypersensitive state, it will succumb only if the second dose is a fairly large one and is given after an interval of at least ten days and by a route which will ensure rapid absorption, *i.e.*, intravenously or intraperitoneally. This is a factor which probably reduces the incidence of anaphylaxis in general practice. The route by which the sensitizing dose is given is immaterial.

This phenomenon is readily demonstrated in the guinea-pig. The classical method is to inject a guinea-pig with a small dose (1/100 c.c.) of horse serum and ten days or more later to give it a second dose (1 c.c. or so) of the same serum, intravenously or intraperitoneally. Immediately after the second injection the animal collapses, revealing intense respiratory embarrassment which usually ends fatally within a matter of seconds. On one or two occasions the same phenomenon has occurred in guinea-pigs which the writer injected intramuscularly with a fairly large dose of milk in the course of the biological test for tuberculosis. Even before the hypodermic needle was withdrawn the animals had collapsed. It is presumed that the animal was hypersensitive to the proteins of cow's milk. It should be noted that the inoculum in such cases is non-toxic, but, and this is important, it is a protein foreign to the species of animal injected.

Anaphylaxis can also be conveyed passively to other animals of the same species. If serum from an anaphylactic animal is injected into another animal the receiving animal will become anaphylactic after a few hours, but this state lasts only for a few days or weeks.

Although anaphylaxis has probably received most attention in the guinea-pig it should be mentioned that it has also been studied and shown to occur in other species, more particularly in the rabbit and the dog. In fact Richet and his fellow-workers first recorded their observations in relation to the condition in the dog. In the rabbit and dog, however, the symptom-complex differs from that which occurs in the guinea-pig. In the guinea-pig, as previously stated, anaphylactic shock is characterized by acute respiratory disturbances. This is not so in the rabbit and dog. In guinea-pigs the shock tissue, that is the tissue which is most sensitive, is the unstriped muscle of the smaller bronchioles and, in anaphylactic shock, it contracts to such a degree as to retain inspired air in the dilated air-spaces, causing death by suffocation. In rabbits, the shock tissue seems to be located in the branches of the pulmonary artery with the result that when these vessels become constricted in anaphylaxis there occurs an intense engorgement of the venous system with dilatation of the right ventricle, resulting in heart failure. In anaphylactic dogs, on the other hand, one finds intense distension and congestion of the liver and portal circulation due, in this animal, to spasmodic constriction of the muscular coats of the hepatic veins.

Several hypotheses have been advanced to explain the mechanism of anaphylaxis and that which comes nearest to explaining the various manifestations of this condition is that which is known as the cellular theory put forward by Dale and others. You will recall that anaphylaxis is revealed when an animal is given a second injection of the same foreign protein after a definite interval of time and by a channel favouring rapid absorption. According to the cellular theory the first or sensitizing injection stimulates antibody formation after the manner of immunization, but in animals which subsequently become anaphylactic it is believed the concentration of antibodies is not sufficient to satisfy the requirements of the tissue cells and the circulating blood. Most of the antibodies formed slowly disappear from the circulation and become fixed in or on the tissue cells. When a further injection of the same substance or antigen is given ten days or so later the antigen and antibody unite, not in the circulating blood as would appear to be the case in a resistant animal, but in or on the tissue cells. This leads to cell injury and the release of substances including histamine and it is to the histamine liberated in this way that the symptoms are due. The histamine causes marked contraction of certain unstriped muscles the site of which varies in different animals. Thus the production of anaphylactic shock can be divided into two stages. First, the antigen-antibody union in the tissue cells and second, the action of the histamine so released on the particular shock tissue of the animal. To prevent anaphylaxis it is necessary

* Presented to the Western Counties Division, N.V.M.A., at Exeter, March 27th, 1946.

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that antigen-antibody union occurs not in the tissue cells but in the circulating blood, and this appears to be the fundamental difference between anaphylaxis and immunity. In immunity, circulating antibodies unite with antigen before the latter reaches the cells. The difference between anaphylaxis and immunity is thus of a quantitative and not a qualitative nature.

If, you may ask, histamine is really responsible for anaphylactic shock, is it not possible for similar symptoms to be set up by injections of histamine, or other products which damage the tissue causing its release, without any antigen-antibody union? The answer to this is "Yes" and until this was recognized the problem remained a little confused. It is now known that several toxic substances, when injected into the body, cause tissue damage, the release of histomine, and symptoms almost identitcal with anaphylaxis. But it is important to remember that in these cases no previous sensitization is necessary. To distinguish such reactions from true anaphylaxis the term "anaphylactoid" is used. One of the best known of these anaphylactoidogens is peptone, a protein commonly incorporated in bacteriological culture media. Peptone is a direct endothelial cell poison and by injuring such cells causes the release of histamine and possibly other substances which give rise to anaphylactoid shock.

At this stage let us consider to what extent these anaphylactic and anaphylactoid reactions occur in animals. Although probably not common so far as our information goes, there seems to be little doubt but that they do occur occasionally. On one or two occasions my attention has been drawn to cases of apparent anaphylaxis in pigs which have been injected with swine erysipelas antiserum. Hutyra, Marek & Manninger (1938) also record several instances. The reaction which occurs has nothing to do with the disease or the antibodies in the serum but is probably associated with two sets of circumstances, *viz.*, that the immune serum is heterologous, that is, has been produced in some species other than pigs, probably a horse, and also because the injected pig has previously been sensitized to horse serum-proteins when being given serum against swine erysipelas or some other condition.

In cattle, both anaphylactoid and anaphylactic reactions appear to occur. The writer has knowledge of cases in which cattle, within a few hours of being injected with an immunizing agent, have shown acute tympany, profuse sweating and colic, together with the involuntary passage of urine and faeces. Some cattle died and others eventually recovered. All the evidence in such cases seemed to point either to anaphylaxis due to injecting some foreign protein to which the animal had been previously sensitized or to an anaphylactoid reaction due to some toxic substance such as peptone being present in the inoculum.

A form of anaphylactic reaction has also been described in cattle in association with warble-fly larvae infestation. It is possible that when the maggots die in the tissues either spontaneously or as a result of manipulation, proteins are released from the larvae. These proteins are absorbed and sensitize the body cells so that if further invasion of the tissues takes place an anaphylactic reaction occurs. The symptoms described by observers of this condition comprise respiratory distress, profuse lachrymation and salivation, widespread oedematous lesions, etc.

Turning to the experimental form, reference should be made to the work carried out by Kerr & Robertson (1943) in relation to Trichomoniasis. These workers demonstrated that cattle which had been infected with *Trichomonas foetus* or had been sensitized by instillation of extracts of Trichomonas into the uterus responded to further instillation in a characteristic manner. In from 30 to 60 minutes after the second instillation (the shocking dose) animals showed no inclination to move about or feed, the rate of pulse and respiration was increased and acute tympanites occurred, some animals assuming a tense drum-like condition. Symptoms of anxiety and respiratory distress followed. In some cases the animals returned to normal in about an hour, others took eight to ten hours. Subcutaneous injections of 3 c.c. adrenalin produced early alleviation of symptoms of distress, principally that of tympany, and the authors suggest that this was probably due to relieving the spasm of the involuntary circular muscle at the opening of the rumen.

In the case of the horse, the commonest condition which comes to one's mind is purpura haemorrhagica. This condition, which is invariably secondary to some such disease as strangles or influenza, has features which suggest it to be a form of histaminosis. It seems very probable that the characteristic oedematous and urticarial changes and the petechial haemorrhages are a result of the direct action of histamine on the integrity of the vascular endothelium. The precise way in which this release of histamine is brought about remains undetermined, but one is inclined to the view that the reaction is anaphylactoid in nature and is caused by the action of some "toxin," bacterial or otherwise, on the tissue cells.

The suggestion that some forms of haemorrhagic gastro-enteritis in the greyhound may be of a hypersensitive nature was I think first put forward by McFarlane in 1942. Having conducted many autopsies on such cases and in view of the completely negative results which followed the usual routine examinations, one is also inclined to seek an explanation along these lines. The similarity between the lesions found in such cases and those encountered in experimental anaphylaxis in the dog cannot be ignored.

Atopy, Natural Hypersensitiveness, Idiosyncrasy

The second form of hypersensitiveness which it is proposed to discuss is the form commonly met with in man, and to a lesser extent in animals, which results not from the injection of, but from exposure to substances, usually, but not exclusively, of a protein nature. Into this category come hay fever and asthma in man, also the sensitiveness which some individuals reveal to dandruff, hair and emanations from animals, various food proteins, etc. The list of substances incriminated from time to time is a very long one.

As in anaphylaxis there is a marked similarity in the symptoms which these various agents set up, but the acute generalized shock of anaphylaxis does not occur. As a rule in man the changes tend to be localized to certain tissues depending in large measure on the path along which the inciting agent has entered the body. When the agent reaches the respiratory tract by inhalation, as in hay fever and asthma caused by pollen, dusts, etc., the chief change is congestion and oedema of the respiratory tract, eyes, etc.; when by the alimentary canal due to eggs, shell-fish, strawberries, etc., the lesions are those of urticaria, eczema and angioneurotic oedema. When it occurs by the skin, as in the occupational forms among furriers, bakers, bulb growers, etc., or through contact with certain plants, it is characterized by dermatitis.

Another similarity to anaphylaxis is the fact that the hypersensitiveness in many forms of atopy can be transferred passively to non-sensitive individuals. It may interest you to know that if the serum of a sensitized individual is injected intradermally into a normal person and from six to 12 hours later the atopen or inciting agent is injected into the same site a well marked urticarial wheal develops (Prausnitz-Kustner reaction). This reaction is attributed to an active substance, called "reagin," in the sensitized individual and for this reason this type of sensitivity is spoken of as reaginic atopy or reaginic allergy. It must be pointed out, however, that this substance "reagin" has not as yet been identified with any of the known antibodies which occur in immune sera.

Another important feature of atopy is the specific nature of the hypersensitivity. An individual may breathe air heavily charged with pollen from numerous species of plants and endless varieties of dust, but unless it contains the pollen of the particular species of plant or the form of house or other dust to which the individual is susceptible no reaction occurs. Sometimes a person is atopic to several different atopens.

The susceptibility of man to these various inciting agents can be determined by the intradermal injection of extracts of these substances and desensitization has been practised with success in many cases, but you will understand that the wide range of possible agencies makes this test very much a "hit or miss" method.

Having considered the general principles and features of this form of hypersensitivity in man one wonders to what extent these reactions occur in animals. It is probable that the condition occurs much more frequently than is generally realized, but at present the whole position is somewhat obscure.

It is claimed that hay fever occurs in dogs and some clinical tests carried out with pollen appear to confirm this view. Some of the many eczematous conditions encountered in dogs are possibly manifestations of hypersensitiveness to certain articles of food. Burns (1933) by a series of cutaneous tests in dogs has shown that some were sensitive to lettuce, rice and tomatoes, and subsequent feeding on these foods lent support to his findings. In horses, a form of pulmonary emphysema known as "heaves" is said to occur in circumstances similar to asthma in man and it is possible that its aetiology is similar. A recent publication claimed that it responded to similar drugs to those used in human asthma.

Some of the many forms of urticaria or nettlerash in horses, cattle and dogs are probably idiosyncrasies of this nature. In cattle, for example, there is the condition spoken of in some parts of the country as "blaine" or "ting." Cattle suddenly develop oedematous swellings in the mouth and on other parts of the body and often reveal an intense dyspnoea. These symptoms and lesions not infrequently disappear as suddenly as they arise.

Then there are some forms of "hoven" or "bloat" in cattle. Whilst some of these may prove to be forms of hypersensitiveness the evidence in support of the claim is hardly sufficient as yet to warrant any definite statement being made.

In some parts of country it would appear that cattle turned out on to leguminous pastures sometimes develop an acute pulmonary emphysema. This condition seems to be probably some form of hypersensitivity to some agent in the pasture.

An example of the occurrence of hypersensitiveness in the horse is given in a recent publication by Kerr, McGirr & Lamont (1946), who described a condition known as "blue nose disease" in the horse in Northern Ireland. It appears to occur only in horses at

grass and seems to develop very suddenly. The chief symptoms are oedema of the nostrils and face and a peculiar purplish discoloration of the hairless unpigmented muzzle below the nostrils. Cerebral disturbances are also a feature. Death may occur in from a few hours to three or four days and the mortality may be in the region of 70 per cent. The authors believe this condition to be a form of hypersensitivity possibly associated with some agent on the pasture.

Serum Sickness

In the course of our consideration of anaphylaxis reference was made to the immediate shock which sometimes results from the administration of a second dose of serum. No mention was made of the condition known as "serum sickness" or "serum disease," a well recognized condition in man which occurs after a single dose of serum has been given for the first time. The reason it was omitted at that stage is because there is an element of doubt whether so-called serum sickness bears any relationship to either anaphylaxis or atopy. It is a natural hypersensitivity or idiosyncrasy and unlike anaphylaxis is not preceded by an artificially induced state of hypersensitiveness.

Symptoms appear after an interval of from three to 12 days and consist of urticaria, oedematous swellings and joint pains. Although disturbing to the patient, the condition is not serious as a rule.

It would appear that this form of hypersensitiveness has also been observed in animals, chiefly in pigs which have been given serum for swine erysipelas or swine fever, and in dogs for distemper. Hutyra, Marek & Manninger state that it occurs most commonly in cattle. Inasmuch as serum treatment, except perhaps in dogs and pigs, is not very commonly employed in domesticated animals the significance of the condition is hardly likely to arrest attention, but it is a possibility one cannot dismiss when untoward symptoms appear a few days after the use of serum.

Allergy. Infectious Allergy. Bacterial Allergy

The third form of hypersensitiveness to which it is proposed to refer is one with which you are all much more familiar, *viz.*, allergy. Heeding Hadfield & Garrod's injunction on this subject in "Recent Advances in Pathology," one's introduction should include a definition. These authors in their reference to the above subject in their book write as follows:—

> "Anyone embarking on a discussion of allergy is well advised to define his meaning of the term before he proceeds any further. It is the most abused word in medicine, and not a little of the confusion surrounding it is due to indiscriminate misapplication. Its very inventor has even used it in the title of a book on malignant disease, upon which one reviewer observes that if anyone is entitled to use the word allergy in any sense he chooses, that man is Pirquet, since it was he who created it, but 'a word once given to the world and accepted by it ceases to be the property of the donor.' He proceeds to say that there is 'a danger of its passing into a state of complete incomprehensibility through being applied, for high-sounding purposes, to every conceivable sort of physiological or pathological change which occurs in the animal body.' This criticism is not too strong for some of the loose writing and thinking with which this subject is beclouded, nor has it, in our opinion, been clarified by the introduction of a whole series of further terms, such as hyperergy, hypoergy and anergy."

Allergy denotes the state of altered reactivity on the part of the body tissues to bacteria and bacterial extracts, this increased sensitivity having been incited by the presence of that organism in the tissues, which as a rule occurs in the course of infectious disease. This phenomenon is best shown in the tuberculin reaction. The animal is "sensitized" by infection with tubercle bacilli or by the presence of some closely related organism in the tissues, and so when injected at a later date with tuberculin a violent inflammatory reaction occurs at the site of injection, around the various diseased foci, and to some degree in the system generally, according to the method of application. If following the test one or more of these reactions is unduly prominent the animal is judged to have reacted positively.

The inoculum consists of some culture extract or filtrate of the organism concerned which has been freed of as much extraneous material as possible. The product is injected into the dermis of the skin, the subcutaneous tissue, the blood stream, peritoneal cavity or into the conjunctival sac according to the experience gained in each particular disease or species of animal.

Apart from tuberculosis, the best known diseases in which this phenomenon can be demonstrated are glanders, brucellosis and Johne's disease. Generally speaking, these allergic tests are specific, but in some cases there is difficulty in producing a product with the desirable selectivity.

Although there is close relationship between allergy, atopy and anaphylaxis, there are certain definite differences. Allergy is revealed by the injection of bacterial products into the tissues of an infected animal and the reaction which follows does not consist of an immediate collapse of the animal but a delayed inflammatory response in which the temperature rises rather than falls. Allergy is not associated with the presence of circulatory antibodies and it is not a form of hypersensitivity which can be passively transferred to other animals. No amount of serum from an allergic animal will render a normal animal allergic.

There is still some doubt as to the precise nature of the reaction. Some claim that the local inflammatory reaction is a form of protection and is part of the protective mechanism of the body. Others maintain that it is a distinct and merely incidental result of some infectious processes which is of no importance except that it has a diagnostic value and sometimes has unfortunate effects on the affected animal. The latter is the view most widely held, there being much evidence to show that allergy and immunity are not directly dependent on each other. It is well known that animals which are immune and allergic can be desensitized without influencing their immunity to the slightest degree. The resistance of such desensitized animals resembles that which occurs in natural immunity. A state of allergy is not necessary for protection.

It would appear, therefore, that although the presence of allergy provides a most useful means of diagnosis, the existence of the allergic state may have serious consequences for the animal concerned. One must not assume that the allergic reaction occurs only when the animal in question is injected with the specific product, *e.g.*, tuberculin. It probably happens to some degree whenever the animal comes into contact with further infection of the same nature. Whenever the allergic reaction occurs, extensive inflammatory and necrotic changes take place in the cells concerned.

It is maintained by many in our sister profession that some of the most striking manifestations of disease, particularly in tuberculosis, in rheumatism and streptococcal infections, and in fungal diseases, are due to allergic reactions rather than to the direct action of bacterial toxins. If such is the case, and if allergy is not dependent on immunity, it would appear not unreasonable to suggest that when an allergic individual is detected it is in the best interests of that individual for it to be desensitized, where our knowledge of the disease makes that procedure possible. It is conceivable that such a course might make for very significant changes in the outcome of some of the diseases which have been mentioned. However, that is for the future to decide. Boyd in 1938 stated, "Many of the problems regarding the relationship of immunity and allergy are still shrouded in darkness, but in place of what formerly was chaos we are beginning to get at least a glimpse of a nebular hypothesis." That is equally true to-day.

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CHEMICAL SOCIETY: CENTENARY CELEBRATIONS

The Council of the Chemical Society proposes to celebrate during July 15th to 17th, 1947, the centenary of the foundation of the Society, which was due in 1941. Many distinguished overseas chemists are being invited. It is hoped to arrange a series of special events, both social and scientific, which will include an exhibition to illustrate the Society's history. An Executive Committee to make arrangements for the celebrations has been set up with Professor C. N. Hinshelwood, President of the Society, as Chairman, and Dr. D. C. Martin, General Secretary of the Society, as Secretary. It is anticipated that the Eleventh International Congress on Pure and Aplied Chemistry will take place immediately following the centenary celebrations of the Chemical Society.—*Nature.*

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Sir Jack Drummond, F.R.S., Scientific Adviser to the Ministry of Food, and Dr. T. Moran, C.B.E., Director of Research and Deputy Scientific Adviser, have resigned to take up commercial appointments. Pending the appointment of a successor to Sir Jack Drummond, Dr. M. Pyke, who has returned to the Ministry's service from the Control Commission for Austria, will take charge of nutritional matters, and Dr. H. R. Barnell will deal with technological problems in regard to particular commodities.

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Weekly Wisdom

Prosperity, like peace, is indivisible.—Mr. Herbert Morrison.

THE VETERINARY RECORD

July 6th, 1946

REMUNERATION OF THE VETERINARY OFFICERS OF THE MINISTRY

It will be within the knowledge of our readers that the negotiations between the National Veterinary Medical Association and the Ministry of Agriculture upon the revised salaries to be paid to the veterinary officers of the Animal Health Division have been suspended. This interruption in the smooth flow of negotiations arose out of the fact that when the President and his colleagues went to the Ministry to discuss the proposed scale, they were informed that no negotiation was possible upon the proposed salary for the Chief Veterinary Officer. As this decision was made without consultation with the Association, contrary to repeated assurances given to the President during the last few months, the Association's representatives were impelled to withdraw from the meeting. We are glad to inform our readers that this action of the President received the unanimous support of both the Finance and General Purposes Committee and of the Council of the "National" at the recent meeting held in Edinburgh. Indeed, it was heartening to find that all members of the profession, whether whole-time officers or practitioners, were equally strong in their support.

It will be recollected that the Association urged the Ministry to improve the salary scale of their veterinary officers at the time of the re-organization of the Diseases of Animals Division following upon the passing of the Agriculture Act, 1937. At the earnest request of the Ministry the Association desisted at that time from pressing its point further in the interests of the full development of the progressive policy which they anticipated would result from the impending re-organization. It was then agreed, however, that there would be a re-consideration of the scale of salaries at an early date. Unfortunately the War intervened and although the Association of Veterinary Inspectors raised the matter several times during the course of the War, no re-consideration of veterinary salaries was made until the Government had decided upon its post-war policy for scientific and professional officers within the Civil Service.

After such a long delay it was the more disappointing to learn that the Minister had accepted a status for his veterinary personnel so out of keeping with the responsibilities of the duties involved and so much inferior to that accorded to human medicine. The Association is not striving to raise the salary of an individual officer but is endeavouring to secure a status for the post of the Chief Veterinary Officer that will enable conditions to be created which will attract the best recruits and offer opportunities for the full development of the service as one of positive animal health. It would be idle not to admit that the profession generally is greatly disappointed with the development made by the Animal Health Division since the Agriculture Act. Indeed it is awaiting with growing impatience the transformation of that division from one dealing essentially with the continued freedom of the country from the major animal scourges to one more actively engaged in securing the control and eventual eradication of the more insidious diseases, the production of milk and meat of the highest quality and the improvement of livestock in every possible way. A full complement of officers within the service satisfied with their conditions of employment and their status in comparison with other learned professions is therefore essential.

Yet despite the great similarity between the length and breadth of professional training the post of Chief Medical Officer of the Ministry of Health is thought to merit a salary of £1,000 in excess of that of the Chief Veterinary Officer of the Ministry of Agriculture. Furthermore the two deputy Chief Medical Officers are to be accorded a higher place than that of the Chief Veterinary Officer. It would appear that the authorities have failed to appreciate the responsibilities of the latter office. Not only must the Chief Veterinary Officer organize and develop a service comprising up to 550 whole-time and more than 1,000 part-time professional men and women but he must maintain the country free from the major notifiable diseases with a high rate of mortality and at the same time go forward with schemes to reduce the heavy incidence of such diseases as tuberculosis, bovine contagious abortion, mastitis and infertility. The responsibilities involved in the execution of these duties are heavy in Great Britain in view of the high incidence of these diseases, the great density of the human and animal populations and the corresponding greater risk of unsafe food products to the consuming public. These facts are appreciated, we are glad to say, both in Agricultural and Parliamentary circles as is evidenced by the support which the Parliamentary and Scientific Committee and the National Farmers' Union is affording the Association in its present stand.

Under these circumstances we welcome the decision of the Minister of Agriculture to meet a small delegation from the "National" to discuss the proposals in so far as they affect the post of the Chief Veterinary Officer. It is to be hoped that this decision will re-establish the confidence which had hitherto existed between the Ministry and the Association and will result in a joint effort to secure for the Ministry's veterinary staff the status and conditions of service conducive to prolonged efficiency.

LONG-TERM SCHEME TO ERADICATE BOVINE TUBERCULOSIS

From a report presented to the Council of the National Farmers' Union by Mr. J. W. Salter Chalker, Chairman of the Diseases of Animals Committee, it appears that part agreement has been reached between the Milk Board and the N.F.U. on a long-term scheme to eradicate bovine tuberculosis. This will mean the building up of "free" areas and compensation for slaughter. One big point outstanding is the rate of compensation.

The signal for the start is delayed meanwhile by shortage of general labour and of veterinary surgeons in particular.

The Ministry has authorized the N.F.U. to inform its members that it is hoped to form "areas" free from tuberculosis as soon as circumstances permit.

The following are the points to be considered when selecting an area:—

1. Low incidence of disease and good veterinary history regarding tuberculosis.
2. Suitability of area for raising good stock to replenish breeders outside the area.
3. Proximity of the area to allow for expansion (it is thought desirable to expand initial areas rather than create numerous small areas—this will contribute favourably to the economy of the scheme and minimize the risk of infection).
4. Availability of at least two markets within an area, as it is desirable to have free movement and free trading within an area.
5. Boundaries of an area need not be restricted to county boundaries.
6. Reactors within an area to be slaughtered and compensation paid by the Ministry.

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The Institute of the Horse has acquired St. George's School, Winkfield, Ascot, where a national school of equitation is being formed. Here instruction will be given by ex-Weedon instructors in equitation, stable management, and horse training. This school is designed to take the place of the Army School of Equitation at Weedon, now disbanded owing to the mechanization of the Army.

N.V.M.A. Meetings in Edinburgh

Summary of Proceedings

The obligation of the Council of the N.V.M.A. to hold a quarterly meeting annually in Scotland was accepted personally by a sufficient number of members to render the Committees held in association with the June meeting more representative than they have been for many years. Much business of great moment to all members of the "National" was transacted before, at the close of the meeting of Council on June 21st, thanks for the hospitality of the "Dick" College in housing the Council and Committees during "very pleasant sessions" were accorded the acting principal, Professor Matheson, while Professors Mitchell and Grahame and other members of the staff were thanked for their untiring efforts for the comfort of their visitors.

The proceedings of Council commenced with a welcome feature in the form of a letter from Dr. Feunteun, returning grateful thanks for the arrangements made by the N.V.M.A. which had rendered the recent visit of the French Colonial Delegation as enjoyable as it was instructive, and expressing the hope that it would be possible to arrange a visit to France in return. Of particular appropriateness was the receipt of an invitation from the Scottish Branch to the Association to hold the Annual Congress of 1947 in Edinburgh, for which the President held out the promise of very sympathetic consideration at this year's annual meeting. It was a sad coincidence that the Obituary List should contain the name of Mr. John Brown, of Invergordon, to whose memory as a fine practitioner, ever ready to help the younger generation, the President and Professor Mitchell paid tribute. The announcement made by the General Secretary, amid applause, that the election of 26 applicants raised the membership total above the 3,000 mark, brought Council to the consideration of Committee reports.

From the Finance and General Purposes Committee, the report of the Provisional Conmittee for this year's Congress in London next September, representing as it does a good step forward towards normal peace-time standards, was received with unqualified approval.

Less unanimity greeted the important recommendation of the Committee that to meet the present and prospectively increasing heavy financial commitments of the Association, the membership subscription (with certain concessions to members resident overseas, recently qualified members, and in the case of man and wife members, and students) should be raised to £4 4s. per annum. The division of opinion, however, resided not in the recognized necessiay for an increase of subscription, but in its amount. The recommendation passed Council for transmission to the Annual General Meeting, but every member, at least a month prior to that meeting, is to receive a memorandum giving full details of the reasons prompting the recommendation. Thus there is no intention to present members of the Association with a *fait accompli*, and final decision will then be made.

A restoration of unanimous enthusiasm came with the announcement of those to be recommended to Annual Meeting as holders of office for the year 1946-47, namely: For election as President, Professor W. M. Mitchell, who will, of course, have with him as Vice-President, the present incumbent of the highest office, Mr. George N. Gould; Mr. L. Guy Anderson to become Junior Vice-President (President Elect), with Mr. H. E. Bywater and Mr. T. L. Wright recommended for re-election as Hon. Treasurer and Hon. Secretary respectively. Equally popular was the notification that Mr. Steele-Bodger, for his work in the interests of Veterinary Science, more particularly as Chairman of the Survey Committee, and his untiring endeavours in the field, is to receive the Dalrymple-Champneys cup and medal on the unanimous recommendation of that committee.

Under the control of Penicillin (No. 1) Order it was revealed that the product is now available to the medical and dental professions, but not to the veterinary profession. This manifest absurdity was the subject of the following resolution:—

> "The Council of the N.V.M.A. protests at the exclusion of the veterinary practitioner from the provisions of the Control of Penicillin (No. 1) Order. In view of the general release of supplies of penicillin for medical and dental purposes granted under that Order, the need for the maintenance of milk supplies at the highest possible level and the losses known to be brought about by disease, which will be accentuated by the lower nutritional standard which is likely to be caused by the reduction in rations for dairy cows, this Association urges the Ministry of Agriculture to make the strongest representations to the Ministry of Supply to permit the very early release of penicillin for use in bovine veterinary practice."

Council learned, with deep concern, that the Association's negotiations with the Ministry of Agriculture, regarding the salaries of veterinary officers of the Ministry, had proved completely abortive, and unanimously adopted the following resolution from the Appointments Committee:—

> "That this Committee expresses its grave disappointment at the action of the Ministry of Agriculture in precluding free discussion of the proposed new salary scales for its Veterinary Officers and recommends the Council to give its full support to the President and other representatives of the Association in their action in withdrawing from negotiations with the Ministry. It authorises the President to take all such action as he deems desirable in this matter. The Committee further recommends that, in the meantime, no advertisement for veterinary appointments with the Ministry be accepted for *The Veterinary Record* pending an agreed conclusion to the negotiations."

Following consideration of the alarming suggestion of the Ministry of Agriculture, as revealed in the report of the Appointments Committee, to place unqualified persons covered by the recommendations of the Chancellor Committee, on a register under the designation "Veterinary Practitioner," the following resolution was passed:—

> "That this Council takes a very serious view of the proposal to place unqualified persons covered by the recommendations of the Chancellor Committee on a register under the designation 'Veterinary Practitioner,' and recommends that the proposed designation, or the use of the word 'Veterinary' in any other proposed designation, be opposed by every possible means."

A further source of dissatisfaction was the continued delay, reported by the Joint Veterinary Officers and Public Health and Parliamentary Committee, in obtaining from the Ministry of Agriculture its proposed arrangements for implementing the provisions of the Food and Drugs (Milk and Dairies) Acts, 1944, and it was decided that the Officers of the Association should make renewed representations for information and discussion at the earliest possible date.

The demand made by the Royal Sanitary Institute, at the instigation of the Veterinary Hygiene Section of its recent Health Congress at Blackpool, that the Government should give high priority to the eradication of bovine tuberculosis, was before Council from this Committee. As a matter of urgency, the Ministry of Agriculture is to be requested to furnish the Association with details of their proposed scheme or schemes for the eradication of the disease, and asked if the date of commencement has yet been determined. (In parenthesis, it may be recorded that references were made to the persistent search for a reliable, less cumbersome test than the double comparative intradermal.)

After all this, Council was relieved, to learn that at least one Ministry (that of Fuel and Power) had eased the minds of veterinarians, namely, by assuring the Association that the Coal Industry Nationalization Bill makes provision for the National Coal Board, on taking over the industry, honouring any relevant contracts entered into by colliery concerns with veterinary surgeons and others.

From the report of the Editorial Committee, it was learned that the satisfactory number of 17 divisions, out of 25, had replied to the request of Council to be furnished in time for presentation to the June meeting of Council, with their views as to the advisability of continuing the "Questions and Answers" feature of *The Veterinary Record*. The consensus of divisional opinion being markedly in favour of its continuance in the body of the Association's journal, this course was agreed upon. The replies received embody, as also requested, a large number of helpful comments on the Section, and suggestions both for its improvement and for increasing the clinical interest and value of the

(*Continued on page* 290)

Questions and Answers

"Questions and Answers" will be published on alternate weeks.
The submission of questions for inclusion in this column will be welcomed: they can relate to any aspect of veterinary work. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address.
Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.
All communications should be addressed to the Editor.

Control of Trichomoniasis in Cattle

Q. CLXII.—*Is there any treatment which will cure trichomoniasis and its associated endometritis in a relatively short period of time in female bovines?*

A.—The control of trichomoniasis in cattle is primarily a herd problem. When it is established that *T. foetus* infection exists, the non-pregnant females should be divided into two groups: (*a*) those actually or potentially infected by the carrier bull, and (*b*) those which have not been exposed to infection. This group will comprise recently calved cows and maiden heifers.

The farmer must be made to appreciate that there shall be no errors in regard to group (*b*) and animals about which there is any doubt as to whether or not they have been served must be included in (*a*). When more than one bull is being used the general attitude should be that they are all carriers, for while service records may indicate that one or other of them has not been exposed to infection such records are often unreliable and the risk is too great to be taken. This attitude may be relaxed in the case, for example, of a young bull running out with heifers which have made no contact with the general herd.

A clean bull should be obtained and its semen used for the artificial insemination of group (*a*); he may be allowed to serve group (*b*). When the disease is widespread or records are of doubtful value, it may be decided to use him by artificial insemination entirely. Artificial insemination should be continued in group (*a*) until all its members have conceived and carried to term, after which service may be recommenced.

In general principle carrier bulls should be destroyed. Such animals, however, may be of high pedigree whose blood it is desirous to maintain. Experience has shown that the semen of such bulls when used by artificial insemination in females which have recently been exposed to infection by service may be followed by a good conception rate without reinfection. As long as the practice is carried out under strict supervision, it may be in the farmer's interests to adopt it for a time.

A form of control which has been recommended is the withholding of breeding activities for three to four months, during which time all the exposed females which are not in calf are subjected to intra-uterine treatment, followed by a resumption of service using a clean bull. The writer does not subscribe to this view, chiefly for the reason that it is probable that there has already been a considerable loss of breeding time and efforts to impregnate cows must be instituted at once. This can safely be done by artificial insemination. Another important point is that we do not know how long the organism can remain alive in the female; it is certain that the so-called oedema of the uterus cases and pyometra cases may persist for months, and there is the risk that the clean bull will become infected and thus serve for the further spread of the disease, particularly amongst the heifers.

Artificial insemination, especially when the herd involved is a large one and infection is widespread, consumes a great deal of time and it is improbable that the practitioner will be able to carry it out. It may therefore be necessary to supply the farmer with the apparatus and instruct him in its use.

Before passing to a consideration of the treatment of individuals it is well to review the clinical picture of the infected herd. Cows and heifers exposed to infected service fall into the following groups: (1) Those which conceive and carry to term without signs of infection. (2) Those which conceive but abort some two to four months later. (3) Those which fail to conceive to one or more services but show no demonstrable evidence of infection when examined. In these the periods of visible heat are often very irregular. This group is generally the largest. (4) Those which fail to conceive and develop an "oedematous" condition of the endometrium with a profuse muco-flocculent vulval discharge. In this group also, oestrum is generally irregular. (5) Those which develop "pyometra." The essential feature of this condition is progressive distension of the uterus by exudate. It is probable that persistence of the corpus luteum is an important factor. The material occupying the uterus may be of the muco-flocculent nature mentioned in (4) or it may be "milky" pus due to the presence of pyogenic coryneobacteria. In this group motile trichomonads are generally demonstrable in the cervical mucus.

The first provision in regard to treatment is the institution of a careful watch for signs of oestrum so that animals in group (5) may be inseminated as quickly as possible. In those in which suboestrum is a feature, visible heat is likely to be induced by expression of the corpus luteum. Not infrequently during the course of examination of this group one finds individuals in which the vaginal and rectal findings indicate heat, yet they show no signs. Such animals should be inseminated.

With regard to group (4); at one time it was the writer's practice to irrigate the uterus with a 0·1 per cent. aqueous solution of iodine, but the finding of motile parasites after irrigation and also that such animals conceived to insemination without irrigation led him to dispense with the practice. If such animals are having normal heat cycles, inseminate and if necessary repeat insemination, for it is probable that early conception will ensue. If suboestrum exists, expression of the corpus luteum is again the most successful method of inducing visible heat.

Trichomonas abortion does not appear to be complicated by bacterial infection and it is a remarkable fact that the uterus quickly rids itself of the protozoan after abortion has occurred. It is improbable that it will be found later than seven days. Abortion is generally succeeded by a variable period of anoestrum, but as soon as cycles develop insemination should be commenced. The earliest time at which the writer has had an animal conceive after abortion is 67 days.

Animals in group (5) are often thought to be pregnant for there has been no return of heat since service three or four months before. A diagnosis is made on the finding of trichomonads in the cervical secretion and the nature of the uterine distension as felt on rectal examination. Treatment aims at causing regression of the corpus luteum, and, with the removal of the progesterone influence, relaxation of the cervix and contraction of the uterine musculature. Success has been obtained by the intramuscular injection of stilboestrol dipropionate in doses, according to size, of 25 to 40 mg. This has been followed by emptying of the uterus. It may be decided further to "whip" the uterine muscle by the injection of posterior pituitary extract, 4 to 6 c.c., 48 hours after the stilboestrol injection. In the majority of the writer's cases so treated, heat has occurred in four to six days and has been followed by recurrent cycles, but a case has been met in which the stilboestrol although causing evacuation of the uterus provoked the development of persistent cysts in the ovaries. The earliest at which conception has occurred again in a pyometra case (*T. foetus, C. pyogenes*) is 111 days after treatment.

Record. To all these careful and sympathetic consideration is being given by the Clinical Sub-committee. In discussion, it was emphasized that the solution of the age-old problem of maintaining a satisfactory standard and volume of clinical material for the *Record* lay primarily in the hands of practitioners, and that the success of this latest development, the "Questions and Answers" feature, was wholly dependent upon this same source of supply.

"A SALUTARY WARNING"

In an editorial article in its issue of June 21st, *The Scottish Farmer*, after a reference to the potentialities of penicillin in the treatment of many forms of disease amongst animals, proceeds to stress the importance of the "salutary warning" given in a recent issue of this journal against the indiscriminate and the general use of recently discovered therapeutic agents and prophylactics. "The writer in *The Veterinary Record* appears to be fully justified in his appeal that the new 'antibiotics' should be employed with the utmost discretion, administered only in maximum or recommended doses and their application restricted to conditions and circumstances recognized as susceptible to their action.

"It has long been recognized in farming practice that by continued selection in the desired direction the plant and animal breeder may effect very considerable changes and improvements, *e.g.*, in hardiness and resistance to disease, and from the evidence adduced we are forced to conclude that unskilful treatment, however well-intentioned, may result in the unconscious selection and propagation of resistant strains of bacteria, etc., highly inimical to production and even to life itself. Thus, in veterinary and medical research, as in atomic investigation, scientific progress *brings* fresh difficulties and new problems. To be forewarned, however, is to be forearmed; and the present course for the uninitiated layman is undoubtedly not to attempt dabbling with these potent new drugs, but to place himself and his livestock in charge of the professional expert until such time as further experience teaches us their precise qualities, powers and limitations."

IN PARLIAMENT

Penicillin for Veterinary Use

"Supplies Dependent upon Knowledge of Demand for Human Needs"

In the course of a short debate in the House of Commons on Friday last, largely concerned with the absence from the Control of Penicillin (No. 1) Order of provision for the acquisition and supply of penicillin by unregistered medical practitioners, Mr. David Eccles said that he wished to raise the point that he could not see in this Order where agriculture came in, and continued: "We know penicillin is a drug which is useful for animals. We all know that experiments are going on which show that it will be very useful indeed in the livestock industry. Will the Minister be good enough to tell us how it is possible for a veterinary surgeon to get the drug under this Order. I can only suggest it may be under Section 1 (2) (*e*) which says:—

"Under the authority and in accordance with a licence granted by the Minister of Supply."

Where does the Minister of Agriculture come in? This is an important matter for the health of our livestock. How can the agricultural industry get the drug, if it is in supply sufficient beyond the needs of human beings, as I believe it is; how can the drug be obtained by the agricultural industry under this Order?

The Joint Parliamentary Secretary to the Ministry of Supply (Mr. Leonard): When penicillin becomes available in greater measure the policy applied under the present conditions will require to be reviewed, but that is as far as I can go at the present time. With regard to the veterinary use, in reply to a Question of May 20th last, the Minister of Agriculture said:—

"There are sufficient supplies of penicillin for approved research for veterinary purposes, but until the extent of the demand for human needs is known, I am afraid that it will not be possible to indicate what supplies will be available for the treatment of dairy cows generally." [Official Report, May 20th, 1946; Vol 423, c. 8.]

This position still holds. Penicillin is of particular efficacy in the treatment of mastitis, and adequate supplies have been made available to the Ministry of Agriculture for experiments, and large scale field trials are now being carried out.

I have been asked if penicillin is a poison. I am advised that penicillin is not a poison or a dangerous drug, but it may produce harmful results if used without medical guidance. The main reason for limitation is to prevent it being frittered away to trifling uses, and supplies are not yet sufficient, notwithstanding what I have said, if use is made of this very important production in ways other than those to which I have referred. I have been asked what the Order means with regard to Government Departments. That was put in this form to enable penicillin to be used for veterinary purposes, and that will, therefore, make it possible for the Ministry of Agriculture to be one of the Departments referred to.

Mr. Paget: Mastitis is undoubtedly a great scourge of dairy herds to-day. It is the one disease we have not really got in hand. There are various types of mastitis, and a good many of these types respond to drugs of the sulphonamide group, but there is one particular type of mastitis—the most virulent of all the types—which in my district is known as "summer bag." It probably has different names in other districts. It is very prevalent, particularly in August and September; we do not quite know why, but it has probably something to do with the flies. The effect of that form of the disease is that it often kills the cow, and invariably destroys the quarter of the bag which it attacks. I am very anxious that penicillin, which experiments have proved is startingly effective for that type of mastitis, should be available during August and September, if that is possible.

Sir Ian Fraser: It is, as hon. Members have emphasized, supremely important—all the more important in view of the diminishing milk supply which we are to expect next winter—that every possible scientific aid should be brought to the farmer, and I would like an assurance that the drug will become as freely available as possible to the agricultural industry. Particularly I would like to know that the control will come off as soon as the drug is in plentiful supply.

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Lords Debate Feeding-stuffs and Farm Policy

Government Defeat

In the House of Lords on Thursday of last week there was an Opposition majority of 31 carrying against the Government the following motion by Earl De La Warr:—

That this House regrets the new cuts in feeding-stuffs for dairy cows, pigs and poultry, which would cause grave loss and hardship to producers and consumers alike; and calls on the Government (1) to give a clear lead to the agricultural industry in the form of detailed production requirements for a minimum period of four years based on an estimate of the food needs of the country for that period; and (2) to state what steps they intend to take to ensure the provision of an adequate supply of the labour, machinery and other requirements necessary for achieving such production.

The debate followed largely upon the lines of that in the Commons, reported in our issue of last week.

Earl De La Warr said that few people had realized just how disastrous these cuts would be to many thousands of farmers, particularly to the smaller men, and to the housewives of the country. It was, he admitted, due partly to the aftermath of war and to world conditions, but the danger was in accepting something which need not be accepted. It was intolerable that we should have to slaughter our livestock for lack of feeding-stuffs to relieve countries that were not doing so. Most important of all was home production, in which we needed a sense of urgency, leadership, and drive which did not begin to exist to-day, but, taking the long view, let the Government revise their import programme for feeding-stuffs and abandon their crazy policy of destroying the productive power of the home producer in the hope of saving foreign exchange that had to be spent on buying more expensive tinned goods from abroad. Let the Government insist in the British zone in Germany, and let them urge elsewhere, that other countries, especially those receiving relief, should pursue as drastic a food and agricultural policy as we were doing. Above all, let the Government realize that we could no longer afford to be quixotic.

The Earl of Huntingdon, Parliamentary Secretary to the Ministry of Agriculture, dealt first with the labour situation, "the real key to the situation now."

After making an announcement on bread rationing similar to that made in the House of Commons, the noble earl said it was a very sad statement but it emphasized the seriousness of the debate and the extremely critical position and helped to justify or to explain the drastic cuts in animal feeding-stuffs which the Government, very unwillingly, had been forced to make. If blame for the situation arose it must be shared by the late Government, the late Minister of Agriculture, by this Government, and the Combined Food Board. The maize from Argentina came under the allocation of the Board, and Argentina allowed it to be exported only for home consumption. There was no shortage of dollars but of shipping.

With regard to livestock, in view of the world situation we could not increase our imports, but the Government hoped to give a lead to the farming community generally, and to call on their tremendous spirit and talent for improvisation which they had always shown in time of crisis. There should be no question of party politics in discussing this problem. It was a national problem, and more; it affected the whole human race.

Lord Quibell said that this country was reaping what it had sown in many years of neglect of the countryside.

Lord Morrison, dealing with feeding-stuffs, recalled that during the war years local authorities collected 2,000,000 tons of kitchen waste from towns for this purpose. About 450,000 tons was now being collected annually, and experiments were being conducted in the use of containers in each house which would, he thought, bring the collection up to 1,000,000 tons annually. He would make three suggestions—that the Government provide the containers, that they remove the purchase tax from those used in this way, and that they enquire into the position with a view to organizing the collection under one department.

Lord Selsdon said that, considering that we won the war, the comparative food situations in this country and abroad were farcical. He had just returned from France and Belgium. There he saw plenty of food, and in one meal one got sufficient calories to last one a week. It might be "black market," but it did not cost more than a meal in the West End of London. He had read that the Germans were laughing at us over the food position; so were quite a lot of other countries.

Lord Llewellin said that the time had come when the Government ought to say what our food stocks were. The Government had preferred to supply food to other countries abroad rather than maintain the basic rations of their own people, who should be the last to be asked to make further sacrifices. This bread rationing would be a very serious matter in a very large number of homes. No other country had imposed bread rationing or was killing off a great number of its livestock. Our people had taken enough without having this sacrifice imposed on them.

Labour Shortage

Viscount Addison, Secretary of State for the Dominions, said that the supply of labour for agriculture would be difficult for several years. In addition to attracting young men to agriculture there was a need for more women. The shortage of labour and housing was a result of long years of neglect. Manufactures of agricultural machinery before long should be overtaking arrears of production and every effort was being made to reinforce our supplies of spare parts for foreign-made machines.

The estimated saving to be effected by bread and flour rationing in a year would be about 6 per cent. of normal consumption. Thus the rationing scales which had been devised would use about the same amount of bread and flour supplies as was normally absorbed.

But the great value of the system when supplies were in danger was to have control of distribution. He agreed that the British people were entitled to everything that could be provided for them. The demands of Unrra as focused on the Combined Food Board must be taken into account as a new liability since Lord Llewellin's time. It was grotesque but true that the fruits of victory were that we had to help to feed lots of people in our zone in Germany at the expense of the British taxpayer. It was the necessity of keeping life going in that area which had compelled the Government to agree to the diversion of supplies.

Hundreds of millions of people were on the verge of starvation now and the demands on the Combined Food Board were entirely different from anything that existed during the war. He agreed that it was shocking that some countries which were making immense demands on Unrra were keeping their livestock at a high level, which meant that they must be using grain for the purpose; but we could not govern the whole world. We had enough on our plate already. As for supplies from Argentina, it was not from lack of effort that they had not been forthcoming.

It would be a great mistake if this subject became one for party political conflict, which it might easily do if they went on like this. This country, entirely apart from world emergencies, was faced with the necessity of atoning for 20 years of neglect, and atonement would not be effected by making the subject one for acrimonious political conflict. The resolution was deplorably worded, and if effect were given to it it would have a disastrous effect on agriculture.

The motion was carried against the Government by 43 votes to 12—Opposition majority, 31.

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Questions

Physiology Department, Oxford (Inspector's Visit)

Mr. Collins asked the Secretary of State for the Home Department if he is aware that a Home Office inspector called on Professor Edward Liddell, of Oxford, prior to a visit by R.S.P.C.A. officers in connection with an allegation of cruelty to animals; and if he will state the purpose of the inspector's visit and the nature of any report which he made.

Mr. Ede: A Home Office inspector visited the Physiology Department at Oxford University on April 17th—a month before the visit of the R.S.P.C.A. officers. The visit was paid in the ordinary course of the inspector's duties, and he found no ground for adverse comment.

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Slaughtering Policy

Mr. Stanley Prescott asked the Minister of Food when the policy concerning the slaughtering of animals for human consumption will be defined; and when a decision will be taken with regard to slaughterhouses closed during the war.

Dr. Summerskill: My right hon. Friend regrets that he is not yet able to make any statement with regard to long-term slaughtering policy.

Mr. Prescott: Is the hon. Lady aware that the reason given for declining to reopen slaughterhouses is shortage of manpower. Is not that reason now inadequate, and will she give an assurance that there is no intention permanently to prevent the slaughterhouses being reopened?

Dr. Summerskill: There are other factors which enter into this. Some of these slaughterhouses are quite unfit for the slaughter of animals.

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Cattle (Poison Gas Death Claims)

Mr. Snadden asked the Secretary of State for Scotland the numbers of cattle, sheep and other livestock in the counties of Perth and Stirling respectively, which since September 30th, 1945, have died, or have been destroyed, as a result of suspected or alleged poisoning or other disease due to the proximity of poison gas containers.

Mr. Westwood: I understand from my right hon. Friend the Secretary of State for War that claims have been received by his Department in respect of 78 cattle and 15 stillborn calves in Perthshire, and of 133 cattle, 60 stillborn calves, 80 sheep and 374 stillborn lambs in Stirlingshire.

Mr. Snadden: Can the right hon. Gentleman say if this question has been referred to any research institute in order to find out precisely the reasons for this contamination?

Mr. Westwood: Yes, Sir, I am having full enquiries made, and the whole of the Departments that are affected and interested by this problem are concentrating their enquiries and their efforts with a view to finding out exactly what is the position.

Mr. Snadden: Can the right hon. Gentleman say what is being done to prevent further outbreaks?

Mr. Westwood: I cannot say until I have had the report from this expert body of individuals who are enquiring into the whole problem. The hon. Member can rest assured that as and when I get that report, speedy action will be taken upon the evidence in the report submitted to me.

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Milk Herds, Perth (Feeding-stuffs)

Mr. Snadden asked the Secretary of State for Scotland the number of tuberculin-tested and other milk herds in the county of Perth for which an additional allocation of feeding-stuffs is being given as a result of the contamination of pastures by poison gas.

The Secretary of State for Scotland (Mr. Westwood): Only one application for a special issue of coupons to purchase feeding-stuffs has been made in respect of a Perthshire herd which had been kept indoors on the instructions of the War Office authorities. This was granted.

Mr. Snadden: Is the Secretary of State aware that over 100 attested cattle are affected in this herd, that they are still being kept indoors although six months have elapsed since they became visibly affected and that their rations are inadequate? What is being done to remove the cause of contamination, and to provide adequate rations?

Mr. Westwood: The Agricultural Department, who advised the issuing of the special coupons because of the situation which had arisen, were advised that favourable consideration would be given to the issue of a limited quantity of feeding-stuffs to overcome the difficulties which have arisen. As and when applications are made, I will certainly give them favourable consideration.

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Scientific Manpower Scheme

Mr. Erroll asked the Chancellor of the Exchequer whether he is aware that proposals have been made to regrade scientific officers in the Civil Service, with first and second class Honours Degrees, into the experimental officer class for which such qualifications are necessary; and whether, in view of the need to conserve scientific manpower as indicated by the Report of the Committee on Scientific Manpower, he will arrange for an investigation to be made into the present use of scientific manpower in the Civil Service, with a view to ensuring that men and women with high qualifications are not wasted in the lower grades which could easily be filled by persons of lesser attainments.

Mr. Dalton: Efficiency in the use of scientific manpower is one of the main purposes of the new scheme, and I see no reason for any special investigation. The strengthened class of experimental officers will play an important part, and it must not be assumed that the hold of a good Honours degree would be wasted there.

Mr. Erroll: But will the Government realize that such a person would not be wasted if he could be put to very much better use by being employed in a capacity appropriate to his attainments?

Mr. Dalton: We are anxious to make full use of capable scientists in all branches of science and with all sorts of different qualifications. I do not think the hon. Gentleman need fear that we shall waste any talents that can be brought into the public service.

NOTES AND NEWS

Diary of Events

July 10th.—Summer Meeting of the Lancashire Division, N.V.M.A., at "Leahurst," Neston, Wirral, 2.30 p.m.

July 11th and 18th.—Royal College of Surgeons, Charles Tomes Lectures, by Sir Frank Colyer. (See Notices: *We regret that, through a printer's error, last week's announcement was headed "Royal College of Veterinary Surgeons."*)

July 12th.—Annual General Meeting of the Lincolnshire and District Division, N.V.M.A., at Grantham (The George Hotel), 2.15 p.m.

July 19th.—Meeting of the Yorkshire Division, N.V.M.A., at Leeds University, 1.30 p.m.

July 19th.—Meeting of the Biochemical Society in Edinburgh (Department of Biochemistry, University New Buildings, Teviot Place), 10.30 a.m.

July 24th.—Summer Meeting of the Eastern Counties Division, N.V.M.A., at Cambridge (Institute of Animal Pathology), 11 a.m.

July 26th.—Meeting of the Mid-West Division, N.V.M.A., at Sherborne, Dorset.

July 26th.—Meeting of the Royal Counties Division, N.V.M.A., at the Royal Veterinary College, Streatley, 11 a.m.

July 31st.—Joint Meeting of the Section of Comparative Medicine, (Royal Society of Medicine) and the Central Veterinary Society, at 1, Wimpole Street, W.1, 5 p.m.

Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

N.V.M.A. President Revisits Northern Ireland

It has been a great pleasure to our President, Mr. Geo. N. Gould, to be able within the short period of four months to take advantage of the cordial invitation extended to him by the North of Ireland Division in February to pay a further visit to Ulster.

The immediate purpose of his visit was to demonstrate, at the meeting of the Division held at Belfast on Friday, June 14th, the operation of rumenotomy under paravertebral anaesthesia. He was welcomed by the President of the Division, Dr. W. R. Kerr, and a gathering of 95 members and visitors. Following his demonstration, Mr. Gould heard the paper, "Tuberculin Hypersensitivity in the Bovine," presented by Dr. Kerr, Dr. H. G. Lamont, and Mr. L. McGirr, M.R.C.V.S. which was the subject of a prolonged and interesting discussion, opened by Dr. R. F. Montgomerie and Dr. W. R. Wooldridge. The subject matter of the paper had, the day previously, been discussed by the Tuberculosis Association of Ulster, and among those present were Dr. Boyd, Chief Medical Officer, and the Assistant Secretary of the Ministry of Agriculture, Mr. Jones, together with all the tuberculosis officers of the Province and representatives of the medical institutions, hospitals and sanatoria, numbering 45 in all.

The following day the President addressed a meeting of the Livestock Officers of Northern Ireland on "Herd Improvement," with particular reference to disease control and artificial insemination. Mr. John Getty, Chief Livestock Inspector, N. Ireland, was in the chair, and amongst those present at a very well attended and enthusiastic meeting were Lord Justice Babington (Chairman of the Babington Committee on Post-War Agriculture), Mr. J. G. Rhynehart (member of the committee), Professor Morrison, of Queen's University (Director of the Agricultural Resarch Institute), Mr. H. S. Cuthbertson, the Senior Livestock Officer, Dr. H. G. Lamont, Mr. John Campbell, M.R.C.V.S., Veterinary Officer of the Artificial Insemination Centre, the Chief County Executive Officers and the Livestock Officers of the Province, together with representatives of the Faculty of Agriculture of Queen's and of the Agricultural Research Institute, Hilsborough. An animated and well-sustained discussion ensued, following which a vote of thanks, proposed by the Chairman, was carried with enthusiasm.

During his stay Mr. Gould revisited the Ministry's Laboratories at Stormont, where he met Dr. Muriel Robertson and other members of the staff and also many members of the profession. He revisited the Belfast Abattoir, renewing friendship with Mr. John Stratford, M.R.C.V.S., the manager, and was taken by Mr. James Thompson, M.R.C.V.S., to see the largest stud of horses in Ulster, that of Messrs. Inglis. As the guest of Mr. T. Piggott, of Messrs. Inglis' bakeries, both the President and Dr. Wooldridge attended the Rotary Club luncheon, meeting the Vice-Chancellor of Queen's, Sir David Lindsay Keir. To complete a greatly enjoyed "social round," the President and Dr. Wooldridge were among a small number of guests who attended a dinner party on the Sunday night, when those present inculded Capt. Alex Monro, Chief Veterinary Officer, Belfast; Drs. Lamont and Keir, Mr. R. W. Cassells, M.R.C.V.S., Mr. John Stratford, M.R.C.V.S., Mr. J. L. McGirr, B.SC., M.R.C.V.S., and Mr. J. K. L. Pearson, M.R.C.V.S.

Necessarily crowded as the visit was, it was nevertheless thereby rendered the more interesting and enjoyable to the President, and, as he was assured on every hand, was greatly appreciated.

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PERSONAL

Births.—CLARKE.—On June 17th, 1946, at Crewkerne Maternity Home, to Molly, wife of Reginald Clarke, B.V.SC., M.R.C.V.S.—a daughter.

GREENWOOD.—On June 26th, 1946, at the Peel Street Hospital, Nottingham, to Margery (*née* Blaber), wife of E. R. Greenwood, M.R.C.V.S., of Swithland Lane, Rothley, Leics., a son—Martin Robert.

GUNNING.—On June 23rd, 1946, at Acle, Norfolk, to Edith (*née* Rutherfoord), wife of O. V. Gunning, F.R.C.V.S.—a son.

. . . . . .

We regret to learn from the *Kentish Mercury* that Mr. F. H. Ingersoll, M.R.C.V.S., of Lewisham, was found unconscious in the street on Tuesday of last week and taken to Lewisham Hospital, where he is detained with a suspected fracture of the skull. It is understood that Mr. Ingersoll had complained of giddiness earlier in the day but had insisted on carrying on with his work.

LEGAL NOTES

Oxford Physiologist Fined

NOTICE OF APPEAL IN "CAUSING SUFFERING TO CATS" CASE

Professor Edward George Tandy Liddell, of Old Headington, Oxford, in charge of the Department of Physiology at Oxford University, was fined £25 at Oxford for causing unnecessary suffering to a number of cats by unreasonably failing to give them proper and necessary care and attention. Mrs. Gladys Kathleen Scragg, of Southmoor Road, Oxford, who was engaged as an animal attendant, was fined £5. Costs of 10 guineas were allowed. Mr. J. F. Bourke, who defended, said that there would be an appeal.

The report appearing below is extracted from the account of the hearing by the Oxford magistrates published in *The Oxford Times*.

It was alleged that 34 cats were found in a 15 ft. by 10 ft. compound "in every stage of misery and disease." Describing a visit to the compound by R.S.P.C.A. officers and a veterinary surgeon, Mr. Gordon Jones (prosecuting for the R.S.P.C.A.) said some of the cats weighed only 2 lb. instead of the normal 12 lb. One cat lay dead in the compound and others were dying.

Acting Chief Inspector Rogers, of the R.S.P.C.A., said all the cats, with the exception of about five, were infected with cat distemper. Some were unable to see and some had difficulty in breathing. There was a horrible stench. The Inspector said that Professor Liddell told him: "These premises are inspected by Home Office officials. You should have written to me about your intended visit. I know a number of cats have had infection." He destroyed four cats in Professor Liddell's presence, and with his agreement. When it was suggested that the compound was heavily infected with the germs of this complaint, the Professor said: "Nonsense, we have had this before, when the wind has been in this direction. When it changes or turns, this complaint will disappear."

Inspector Maurice Waite, R.S.P.C.A., said 15 of the cats were in an advanced stage of the disease, and six of them were dying. There was no sign of any treatment having been given to the 15 cats. An opportunity was given to Professor Liddell to have a *post-mortem* examination performed on one of the cats in his presence; the Professor said he was very busy, and they could take away four of the dead cats and do what they liked with them. The Professor also said, "We are short of staff, and are unable to get reliable people who understand animals. I admit they have not had the attention they used to have."

Mr. George Baird Taylor, a veterinary surgeon, who went with the two R.S.P.C.A. inspectors to the animal house, said it was overheated, in his opinion. When food was put on the floor, some of the cats could not see it, and fell into the food dish. All the cats were in a poor condition, suffering from cat distemper, which would have been obvious to any veterinary surgeon.

Mr. Jones: How long had they been in this condition, to account for their emaciation?—Ten or twelve days. I should put the limit at 14 days.

He saw no sign of any treatment. In his opinion the direction of the wind would not affect the incidence of cat distemper. There was neglect, he added.

Major R. C. G. Hancock, veterinary surgeon, who examined four cats in Mr. Taylor's surgery, said he would not keep more than six cats in a space of 100 square feet, otherwise one would be always faced with an epidemic occurring. It was absolutely wrong to put 34 cats in such an enclosure in their alleged state; each should have been treated for the distemper individually.

Mr. Jones: What would have been the obvious thing to do to relieve the sufferings of these cats?—The first thing is to isolate any infected animal from the remainder. Then it becomes a matter of treating the symptoms as they arise. The proper sick room temperature for cats should not be above 60 degrees.

One of the cats which he examined had an abscess which must have been agonizing. The weight of another of the cats was 3½ lb., whereas it should have been at least double. Another weighed only 2 lb. 13 oz.

Questioned about the statement in which Professor Liddell had said a change in the wind would affect cat distemper, Major Hancock said his own impression, when he heard it, was one of astonishment. It rather savoured of medieval witchcraft.

The Defence

In evidence, Professor Liddell said he was a Master of Arts, Doctor of Medicine, Bachelor of Chemistry, and a Fellow of the Royal Society. He had been 25 years a teacher of physiology in the Oxford Medical School, at the University Department of Physiology, and from 1921 to 1940 Demonstrator in Physiology. Since 1940 he had been Professor in charge of the whole of the Department of Physiology. He produced certificates and licences

granted to him under the Cruelty to Animals Act, 1876, authorizing him to carry out experiments on living animals.

Mr. Bourke: You are at the moment a specially licensed person with certificates for carrying out experiments on cats—no question of vivisection—in the nature of treatment of cats for the gaining of knowledge for the relief of animals and of human beings?—That is so.

With a view to curing respiratory infections in cats, which interfered with experiments involving operations on the nervous system of animals, he had directed his attention to the use of a drug called sulphamethazine, and it was found that by its use they could overcome the secondary infection but not the basic virus of the distemper.

This operated when they had a bunch of large and cheerful cats, but when it was tried in an outbreak of distemper among a mixed bag of cats it was not so successful.

All the cats in the compound were likely to come under experiment, which would consist not merely of the administration of the drug, but of the food administered. He himself gave the drug three times a day, and gave food to those cats which could not feed themselves. Four days before the inspectors' visit he decided to cease the process in the less well cats, and decided to leave them for a few days.

"I was going to leave these cats to see what would happen. They had had the drug in the early stages. It was stopped, and it would be interesting to see what would happen," he added.

A high temperature was very much appreciated by the cats. It helped them to resist getting distemper, and also helped them when they got it.

It was Mrs. Scragg's job to clean the compound out thoroughly each morning, and she did her job very well indeed.

Mr. Bourke: A lot of light-hearted talk has been heard about isolation and special attention?—I understand that the virus of distemper cannot really be dealt with except by very wide segregation—not by separate compartments in the same room, or another room in the laboratory, but sending them right away.

Would it be practicable to achieve in a place like yours anything like effective isolation?—No. "We rather welcome the distemper and getting it over," he said. "It is like measles in children; once they have had it they probably won't have it again."

His practice had been to clean the noses and eyes of the cats once every 24 hours, and it was nearly 24 hours since this had been done when the inspectors paid their visit.

The abscess on one of the cats was not causing any serious pain or discomfort to the cat, because it was too lethargic to feel it.

Replying to Mr. Francis Walsh (Magistrates' Clerk) he said the Home Office inspectors always paid surprise visits three, four or five times a year.

One visited the department last March and another in the middle of April and he commented very highly on the cleanliness of the room.

Mr. Bourke: Were any of these cats at any time suffering pain which was severe or likely to endure?—No.

At the second day's hearing Professor Liddell said the sulphamethazine was being given to the cats to check the distemper, not as part of an experiment. He denied having caused pain to the cats. He said he told the inspectors that the animals were under the protection of the Home Office, and were Home Office animals, but that did not seem to convey anything to Inspector Waite.

Mr. Jones: I must put it to you that you did not make any reply because the cats were not the subject of experiment?—They were, but it did not seem worth while explaining that rather complicated Act to the inspector at that moment.

The Professor added that he was amazed that the case ever came up. "I had always looked on the R.S.P.C.A. as a benevolent institution," he added. "I thought they were moved by kindness of heart. I was rather surprised they forced their way into the animal house as they did."

He explained that the experiments he was conducting on the cats was to work out a sulphamethazine treatment of sick, lean cats. The experiment had a "negative result." The infected cats were not capable of feeling suffering because of lethargy of the nervous system.

Mr. Jones: If some of the animals in the compound were not the subject of experiment, obviously they were not covered or referred to by the Act of 1876?—No, they were the lightly infected animals with mild distemper.

Answering other questions, the Professor said he hoped, on a future occasion, that he might be allowed to continue his research on the lean animals.

Mr. Jones: You did not call in a veterinary surgeon at all, did you?—Not on that occasion.

I suggest if you had called in a veterinary surgeon he would not have condoned the conditions in the compound?—What conditions?

The conditions you heard described last Friday?—I think that would be a matter of opinion.

Isn't that the fact why you didn't call in a veterinary surgeon?—No.

Am I to take it that you fully approved the conditions which existed in that compound on the afternoon of May 21st?—Yes.

Was it necessary to withhold from these cats every trace of care and comfort?—If you mean whether their noses and eyes were wiped, I say they were attended to with the same frequency as I had been doing, but the control point was that the sulphamethazine had ceased to be given. He added that he did not think the cats were overcrowded.

Was it necessary to let the cats become blind with discharge?—They don't like looking at the light and sit with their eyes closed, and it does not take long for the secretion from the eyes to stick the lids together.

But they were said to be so blind they could not see the food and walked straight into the food dish?—If these things had been treated too often it would have produced new variable factors into the experiment and therefore the deciding factor would have been in doubt.

I suggest that was an abominable piece of unnecessary suffering.—The animals were not capable of feeling suffering because of the lethargy of the nervous system.

Regarding the weight of some of the cats, the Professor said until the distemper was cured the body weight could not be built up again.

Was it necessary to allow two of these cats to have abscesses the size of half a crown ripening to such an extent that they burst in your hand?—They did not burst in my hand, but had burst previously; a discharging abscess is painless.

Re-examined by Mr. Bourke, he said that no part of his experiment could be described as calculated to give pain.

Mrs. Scragg, giving evidence, said the cat compound was thoroughly cleaned each morning and she fed the cats with milk, biscuit meal, horseflesh, and water. No healthy cats were placed in the compound, which was reserved for cats in various stages of infection. She had never seen any cat suffering pain or discomfort.

Professor Harold Burrow, M.R.C.V.S., said he had inspected the compound and considered there was ample room for 34 cats. He considered the floor suitable.

As to treatment of cats with distemper, the less handling the better. Properly done, once a day was enough. Quick emaciation was a feature of cat distemper.

"I can see no cause for complaint," Professor Burrow added. "I think that in very difficult circumstances, with an outbreak of cat distemper, Professor Liddell has done all that could be reasonably expected of him."

Professor A. D. Gardner, Professor of Bacteriology at Oxford University, who has had 30 years' experience of experimental work on animals and was a member of the Oxford penicillin team, said of the cats concerned in the experiment conducted by Professor Liddell that pain would decrease as coma and legthargy came on.

"Nothing I have heard makes me feel that these animals suffered appreciably more than the suffering of all living things," he said.

Mr. Bourke said the case was important for the public and it was important in the interests of animals. It was also important to Professor Liddell, because if the prosecution was right there must be an end of the licences and certificates, and the department must close down.

He referred to Professor Liddell as "a distinguished scientist of European reputation engaged in experiments and observations for the purpose, primarily, of benefiting human-kind, and secondarily of making beneficent discoveries about animals."

He was so trusted and so esteemed that a department and a building were put at his disposal and, no doubt, money was provided for the pursuance of the enterprise.

If they found such a man only looking in very occasionally it might well be a case of neglect, but Professor Liddell was personally doing things of some sort to the animals five times a day, and was administering the drug three times a day.

He suggested the prosecution had rushed in and condemned the man in their ignorance.

Notice of Appeal

After a retirement of ten minutes, the Chairman, Mr. D. M. Rose, who sat with Alderman H. S. Rogers and the Deputy Mayor (Councillor R. P. Capel), announced that the magistrates found both cases proved. Professor Liddell was fined £25, and Mrs. Scragg was fined £5.

On the application of Mr. Jones the prosecution were awarded ten guineas costs against Professor Liddell.

Mr. Bourke gave notice of appeal.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

FOOT-AND-MOUTH DISEASE:

London.—Battle Bridge Road Piggeries, King's Cross, St. Pancras, London (June 29th, 1946).

Norfolk.—Hall Farm, Boughton, King's Lynn, Norfolk (July 2nd).

SWINE FEVER:

Lincs. (*Kesteven*).—Manor Farm, South Hykeham, North Hykeham, Lincoln (June 25th).

Yorks. (*E.R.*).—14, Exchange Street, Driffield, Yorks. (June 25th).

SHEEP SCAB:

Denbighs.—Buarthyre, Maengwynedd, Llanrhaiddr-yn-Mochnaut, Denbigh (June 29th).

Westmorland.—Setterah Park, Askham, Penrith, Cumberland (June 27th).

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TUBERCULOSIS (ATTESTED HERDS) SCHEME

STATEMENT SHOWING POSITION OF "ATTESTED HERDS" IN EACH COUNTY AS AT MARCH 31ST, 1946

County	Certificates of Attestation in force as at 31.3.46	Approximate Number of Cattle Covered by Certificates of Attestation as at 31.3.46	Percentage of Attested Cattle to Total Cattle
Bedford	32	1,780	3·08
Berks	208	11,837	15·9
Buckingham	114	6,508	6·42
Cambridge	43	2,054	6·84
Isle of Ely	6	256	1·24
Chester	108	5,843	2·39
Cornwall	143	5,616	2·22
Cumberland	345	17,822	8·23
Derby	33	1,923	1·03
Devon	321	13,196	3·57
Dorset	233	12,584	9·86
Durham	160	6,156	5·41
Essex	234	11,665	9·5
Gloucester	170	9,987	5·33
Hampshire	243	11,764	8·77
Isle of Wight	14	611	3·07
Hereford	108	6,261	5·17
Hertford	112	7,638	13·33
Huntingdon	8	350	1·22
Kent	163	7,917	6·79
Lancaster	130	6,538	2·23
Leicester	60	3,398	2·2
Lincoln (Holland)	1	41	0·14
Lincoln (Kesteven)	8	314	0·46
Lincoln (Lindsey)	12	1,039	0·65
London	—	—	—
Middlesex	10	352	4·98
Norfolk	120	7,995	4·71
Northampton	38	2,396	1·68
Soke of Peterborough	—	—	—
Northumberland	118	6,131	3·23
Nottingham	30	1,675	1·56
Oxford	185	10,296	11·0
Rutland	5	592	2·97
Salop	176	9,636	3·74
Somerset	374	19,055	6·54
Stafford	51	2,036	0·88
Suffolk, East	47	2,514	3·29
Suffolk, West	44	2,824	7·72
Surrey	169	7,236	14·83
Sussex, East	131	6,168	6·4
Sussex, West	112	5,668	8·54
Warwick	75	5,108	3·56
Westmorland	220	11,595	12·11
Wilts	158	11,923	6·89
Worcester	47	2,500	2·82
Yorks, East Riding	13	577	0·46
Yorks, North Riding	346	11,609	4·96
Yorks, West Riding	167	8,048	2·33
ENGLAND	5,645	288,925	4·59
Anglesey	20	978	1·72
Brecon	161	5,038	11·06
Caernarvon	94	3,344	5·36
Cardigan	2,659	39,142	51·89
Carmarthen	3,442	68,011	50·5
Denbigh	286	7,321	7·32
Flint	38	1,754	2·96
Glamorgan	111	3,065	3·97
Merioneth	765	14,581	34·75
Monmouth	113	4,472	6·93
Montgomery	318	10,835	11·49
Pembroke	1,475	28,887	29·31
Radnor	49	1,272	3·55
WALES	9,531	188,700	19·94
ENGLAND AND WALES	15,176	477,625	6·59
Aberdeen	56	6,029	2·97
Angus	49	5,391	9·47
Argyll	228	9,598	16·12
Ayr	1,527	96,613	68·22
Banff	16	1,178	2·38
Berwick	17	1,323	4·64
Bute	316	8,011	79·04
Caithness	137	1,822	7·56
Clackmannan	17	1,280	28·97
Dumfries	744	47,534	49·66
Dunbarton	103	6,354	39·23
East Lothian	12	1,484	10·73
Fife	99	8,358	14·85
Inverness	29	1,564	3·09
Kincardine	21	1,871	5·71
Kinross	21	1,467	19·12
Kirkcudbright	397	32,486	45·04
Lanark	732	43,790	46·83
Midlothian	76	4,454	19·46
Moray	27	1,854	6·69
Nairn	8	533	6·53
Orkney	154	3,290	7·56
Peebles	67	3,449	32·82
Perth	82	5,608	6·73
Renfrew	102	12,098	38·54
Ross-shire	24	1,208	3·20
Roxburgh	20	1,404	4·51
Selkirk	8	458	7·83
Stirling	179	10,871	26·96
Sutherland	6	274	2·82
West Lothian	48	2,789	19·34
Wigtown	272	24,342	35·62
Zetland	531	1,970	22·72
SCOTLAND	6,215	350,755	24·03

In calculating the percentage of Attested Cattle, the figures of Total Cattle Population at 4.6.45 were used.

MINISTRY OF AGRICULTURE NEWS SERVICE

Minerals in the Ration.—When roughage other than high quality legume hay is fed to stock there may be a danger of lack of minerals in the ration. It is, therefore, advisable to supplement the ration fed with about 1½ ounces of a mineral mixture. A stock mixture can easily be made up of two parts sterilized bone flour, two parts ground limestone, one part common salt. There are on the market many excellent proprietary mineral licks.

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Fresh Lawn Mowings as Pig Food.—Small pigkeepers can feed fresh lawn mowings as a useful addition to the pig's supply of food. They must, however, be fresh. If lawn mowings are fed, it is a good plan to mow a small quantity of grass every day; this will ensure the freshness of the feed. Cuttings should not be fed if over 12 hours old. The richer the cuttings are in clover, the higher the feeding value. Lawn mowings are more suitable to larger pigs than to younger ones.

It is advisable to sweep the lawn before mowing. If trees or hedges of yew border the lawn, great care should be taken to see that the yew leaves are not fed to the pigs. Precautions should also be taken to see that mowings are not used from lawns that have been treated with any arsenical dressing or other substances harmful to pigs.

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The Mineral Factor in Animal Feeding.—The lecture on this subject delivered by Mr. F. E. Corrie to the Discussion Meeting of the Eastern Compounders' Section of the National Association of Corn and Agricultural Merchants on February 21st, has been issued as a reprint. Copies can be obtained on application to the Iodine Educational Bureau, Stone House, Bishopsgate, London, E.C.2.

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MISPLACED POULTRY OPTIMISM

"The figures of British poultry population just released by the Ministry in London and the Department in Scotland, suggest that this branch of the farming industry was misled into a fresh burst of optimism," states the *Farming News* in its issue of June 21st, and continues: "As between March of last year (when the Allied forces had still to cross the Rhine into the Ruhr) and this March, the first springtime since hostilities ceased, England and Wales increased their commercial flock of poultry of all kinds by fully 5,000,000 head, while Scotland's expansion was fully 700,000 head. Total poultry on March 4th last numbered 30,776,000 over the Border, and 5,374,146 in Scotland.

"By how many will these figures slump within the ensuing few

months, with the guillotine of drastically reduced rations hanging over their heads? The figures tell a disheartening tale. They show how ready was the poultry industry to restore its fortune, and how cruel is the present setback.

"Pigs in England and Wales, on the other hand, are not as numerous as they were a year ago. But in Scotland there was a slight increase."

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

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THE COLONIAL VETERINARY SERVICE

Sir,—Your good recommendations for the improvement of this service deserve success. However, before trained men can be of use to Tanganyika a change of policy is imperative. Our *laissez faire* must be displaced by compulsory scientific production. The N.V.M.A. would do a wonderful job by throwing its weight together with that of the Colonial Office into teaching many Members of Parliament and the British Press to realize the urgent necessity for drastic steps to save the soil out here. Massive inoculation campaigns against much early opposition recently greatly reduced the major scourges, rinderpest and pleuro-pneumonia. For the last 20 years veterinarians advised destocking but the position remains. Professional pride is hurt when advice is neglected. Since millions of cattle face starvation before the rains and there is no compulsion to destock, a veterinary officer cannot improve the 400,000 cattle in his charge. Inoculations increase overstocking. Thousands of calves die of thirst.

Few natives of Tanganyika would within the next 20 years voluntarily destock. In a recent detailed census it was found that 10 per cent. of cattle in an eroded area were old thin cows unable to calve again, giving no milk, and impossible to fatten. If even this 10 per cent. were wiped out and eaten locally the position would be greatly relieved, also the children would not die so fast. When British farmers were forced to slaughter pigs and poultry during the present food emergency surely we would not be brutal in tactfully compelling natives to kill and eat the 10 per cent. of their herds, the "walking carcases." From pure humanity it is gross cruelty to allow these animals to exist. Until they go our professional man has to witness this painful daily ten mile drag in search of a few bits of lignified grass, and tons of soil washing down the rivers. These natives are so lazy and indifferent that they have to be firmly persuaded before they will even grow enough food for themselves. Often natives have died of starvation beside their emaciated scrub cattle rather than kill one and live. It is the gross lack of adoption of elementary principles which comes as such a great disappointment to the would-be improver of the African's life. Until cattle get enough grass to live the breed cannot be much improved no matter how many technical men are brought out here.

My 18 months in Tanganyika have been very pleasant, maybe a trifle lonely, and there is much leisure compared to normal practice in Britain. To be constantly appealing to ignorant uninterested natives becomes harassing. The painfully slow improvements and this frustrated feeling that one's training is not being utilized is depressing at times.

Let us compel the natives to save their soil, their stock and their children, and then leave them with freedom to enjoy their blissfully ignorant happy lives, which would be the envy of many a worried suburb dweller.

Yours faithfully,

Musoma, IAN MACADAM.
Lake Province, Tanganyika.
June 9th, 1946.

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SAFER MILK

Sir,—In a recent issue of *The Veterinary Record* was published the leading article in *The Times* of May 6th dealing with "Safer Milk." This draws attention to the delay attending the execution of the official policy which depends on availability of labour and plant for pasteurization, and calls for more vigorous efforts by the Ministry of Agriculture to improve the health of the dairy herds.

There is a simple and effective public health measure which has been overlooked, but could be applied at once in the campaign for safer milk. I refer to the biological testing of herd milk samples taken by the Veterinary Officer after his clinical examination of the dairy herd. By this testing are detected all those cases of tuberculosis of the udder which are not detectable by clinical examination, and the subsequent investigation of positive samples, with the slaughter of the affected cow, reduces the infection of the milk supply of an area to a negligible quantity—so long as the procedure is followed twice or thrice yearly. The value of the measure is reflected, not only on human health, but also on animal health—calves do not benefit by the pasteurization scheme as their mother may still be tuberculous and will continue to pass the infection by her milk to her calf. There is, therefore, an animal health value in this measure as well as its great public health value.

In connection with animal health it should be remembered that the White Paper on Milk actually permitted a reduction from four to one veterinary examinations per annum of accredited herds where the milk was heat treated. This will certainly have a deleterious effect on the health of the future herd.

That the proposed measure is practical is shown by the fact that it was in routine operation in at least two counties (Nottinghamshire and Kent) until April 1st, 1938, when the Ministry of Agriculture abandoned it, on nationalizing the public health side of the veterinary profession.

There is no way in which the status of the veterinary profession could be so quickly raised in the eyes of the medical profession and public as by taking an active interest and part in public health matters. I have previously suggested* that the former interest of the profession in public health matters may have been stifled by the nationalization of that side of the profession, and it is lamentable that there has been no annual report by the Chief Veterinary Officer of the Ministry on the activities of this department since 1937. One wonders whether anything like this will happen when the medical profession undergoes nationalization.

Yours faithfully,

Woodside, Hill Top Avenue, J. S. STEWARD.
Wilmslow, Cheshire.
June 28th, 1946.

* *Vet. Rec.* (1945.) March 31st.

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LIVESTOCK VITAL STATISTICS

Sir,—I wish to support J. Tweedale Edwards and that other J.T.E., to whom the former refers in *The Veterinary Record* of April 27th as his "illustrious namesake," in their plea for reliable livestock vital statistics.

The impression given to the public nowadays by some of our political or urban spokesmen is that if only tuberculosis and contagious abortion were eliminated from the dairy herd, production would soon leave little to be desired. The truth is that mastitis is virtually out of control on farms throughout the world and that such other functional diseases as milk fever, lactation tetany, tympanites, acetonaemia, haemoglobinaemia and sterility are steadily increasing in incidence and severity.

In one small dairy herd in my practice recently, out of the last eight cows that calved five went down with milk fever. The results were one cow dead from a relapse during the night, another dead from traumatic pneumonia, a third lost a quarter due to an emergency inflation in my absence, and only two cows alive and well in all respects. Such an instance was wholly unknown when I was a young man on a dairy farm or as a young veterinary surgeon in a dairying district of Scotland.

One may fully admit the menace of tuberculosis and contagious abortion, but common sense compels one to recognize that the losses from these two controllable diseases are already dwarfed by the rapid increase in uncontrollable functional disease: that is, uncontrollable in existing circumstances.

The matter is serious here, and the point is that we have no statistical data which could tell us what is the rate of increase in diseases like mastitis and milk fever.

Adequate vital statistics are needed to reveal and illustrate the position as it really is. Without this picture there must be a tendency, fostered by our publicists, to concentrate almost wholly on tuberculosis and contagious abortion, and in that process for our veterinarians to be so fully occupied with syringe and notebook that they will lack time, inclination or experience to deal with the growing clinical problem of functional disease.

Yours faithfully,

Scottsdale, Tasmania. J. W. RAINEY.
June 16th, 1946.